

Appl. No.: 10/676,860  
Amdt. dated 10/16/2006  
Reply to Office Action of 08/18/2006

Amendments to the Claims:

1. (Currently Amended) A process for depositing a nanomolecular layer of resin on a carbon fiber comprising:

- a. providing an aqueous solution of an organic compound contained in a non-conducting container, the organic compound comprising carboxymethylcellulose;
- b. connecting a direct current source to said carbon fiber;
- c. providing a graphite rod;
- d. combining the fiber, the aqueous solution, and the graphite rod in the non-conducting container with basic substance;
- e. attaching one power lead of the direct current source to the graphite rod which acts as the cathode, and the other lead to the carbon fiber as the anode to ionize the aqueous solution;
- f. applying an electric potential from said direct current source to cause the ionized aqueous solution to flow to said carbon fiber to form a nanomolecular layer thereon; and
- g. rinsing any excess chemicals from said carbon fiber with a rinse.

2. (Currently Amended) The process as recited in claim 1 wherein said step of providing an aqueous solution further includes ~~said aqueous solution being comprised from the group of polymers, polyamic acid, phenyl phosphinic acid, phenyl boronic acid, and or poly isobutylene alt maleic acid, dissolved in an aqueous medium.~~

3. (Original) The process as recited in claim 2 wherein said nanomolecular layer is characterized by a covalent bonding onto the carbon fiber.

4 – 8 (Cancelled)

9. (Currently Amended) A process for depositing a nanomolecular layer of resin on a carbon fiber comprising:

connecting an anodic lead of a direct current source to a ~~carbonaceous material~~  
carbon fiber or carbon cloth;

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advancing the ~~carbonaceous material~~ carbon fiber or carbon cloth through a first bath in a continuous manner, the first bath comprising an aqueous solution of an organic compound-~~or inorganic compound~~ comprising carboxymethylcellulose, a basic substance, and a graphite rod that is connected to a cathodic lead of the direct current source;

passing an electric current from said graphite rod to said ~~carbonaceous material~~ carbon fiber or carbon cloth;

electrodepositing a nanomolecular layer comprising the organic ~~or inorganic~~ compound on the ~~carbonaceous material~~ carbon fiber or carbon cloth as it is being advanced through the first bath; and

advancing the ~~carbonaceous material~~ carbon fiber or carbon cloth having a nanomolecular layer through a second bath in a continuous manner, the second bath comprising a water or alkaline solution that removes excess chemicals from the nanomolecular layer.

10. (Currently Amended) The process of Claim 9, wherein the ~~carbonaceous material~~ carbon fiber or carbon cloth are disposed on a supply roll prior to being advanced through said first bath ~~comprises a roll of carbon fiber~~.

11. Cancelled

12. (Currently Amended) The process of Claim 9, wherein the organic solution ~~further comprises compound is selected from the group consisting of~~ polyamic acid, phenyl phosphinic acid, phenyl boronic acid, and poly isobutylene alt maleic acid.

13. Cancelled

14. (Previously Presented) The process of Claim 9, wherein the second bath comprises a basic solution.

15. (Previously Presented) The process of Claim 9, wherein the second bath comprises sodium hydroxide, ammonium hydroxide, or triethylamine.